

1. Listing of the claims:

1-24. Canceled.

25. (New) A method for optimally presenting large-scale images comprising:

a) processing source image data to obtain a series K.sub.1-N of derivative images of progressively lower image resolution, and wherein series image K.sub.0 being subdivided into a regular array wherein each resulting image parcel of the array has a 64 by 64 pixel resolution wherein image data has a color or bit per pixel depth of 16 bits representing a data parcel size of 8K bytes, resolution of the series K.sub.1-N of derivative images being related to that of the source image data or predecessor image in the series by a factor of four, and said array subdivision being related by a factor of four such that each image parcel being of a fixed 8K byte size;

b) compressing each image parcel by a fixed 4:1 compression ratio such that each compressed image parcel has a fixed 2K byte size;

c) storing each image parcel on a server in a file of defined configuration such that any image parcel can be located by specification of a K.sub.D, X, Y value, representing the image set resolution index D and corresponding image array coordinate;

d) processing source overlay data into either an open XML or a binary representation containing annotation data in a resolution independent form associated with a display coordinate specification relative to the source image data;

e) compressing said source overlay data and storing on said server;

f) establishing communication between a local viewing device and said server via a network communications channel;

g) requesting an image parcel and corresponding source overlay data;

h) selecting said image parcel in a fixed pixel array size in a resolution less than or equal to the resolution of said client viewing device;

i) retrieval of said image parcel and corresponding source overlay data over said network communications channel from said server for display on said local viewing device;

j) communicating said image parcel and corresponding source overlay data from said server to said local viewing device in a single network data package; and

k) displaying said large-scale image as a discrete portion of a predetermined image on said local viewing device.

26. (New) A method according to Claim 25, further comprising placing a viewing frustrum over said image parcel and corresponding source overlay data on said local viewing device.

27. (New) A method according to Claim 26, further comprising utilization of navigational inputs at said local viewing device to control x, y lateral, rotational and z height positioning of the viewing frustrum.

28. (New) A method according to Claim 25, further comprising decompressing and directing said image parcel and corresponding source overlay data to a display on said local viewing device.

29. (New) A method according to Claim 25 further comprising determining the ordered priority of requests for an image parcel and corresponding source overlay data.

30. (New) A display system for displaying a large-scale image retrieved over a limited bandwidth communications channel, said display system comprising: a) a display of defined screen resolution for displaying a defined image on a client device with limited computing capabilities; b) a memory providing for the storage of a plurality of image parcels displayable over respective portions of a mesh corresponding to said defined image; c) a communications channel interface supporting the retrieval of a defined image parcel; and d) a processor coupled between said display, memory and communications channel interface, said processor operative to select said defined image parcel, retrieve said defined image parcel via said communications channel interface for storage in said memory, uniquely render said defined image parcel over a discrete portion of said mesh to provide for a progressive resolution enhancement of said defined image on said display, limit selection of said defined image parcel to where the resolution of said defined image parcel is less than or equal to said defined screen resolution, and prioritize the retrieval of said image parcel among a plurality of selected image parcels pending retrieval,

wherein the relative priority of said image parcel is based on the difference in the resolution of said image parcel and the resolution of said plurality of selected image parcels, said processor being responsive to said defined screen resolution, and wherein said defined image being from an image viewpoint that encompasses a viewing frustum placed within a three-dimensional space over the defined image.

31. (New) A method according to Claim 26, further comprising: rendering said large-scale image as a discrete portion of a predetermined image on said local viewing device beginning with maximum depth polygons previously identified; iterating over the maximum depth polygons and skipping polygons outside of the viewing frustum; clipping polygons that are at least partially visible to applicable bounds of the viewing frustum; and creating a texture map for a polygon corresponding to said image parcel and writing into polygon corresponding coordinates of a video memory of said local viewing device.

32. (New) A method according to Claim 31, wherein if node index depth of the rendered image is at least equal to a prior determined optimal detail level, iteration over the polygons continues.

33. (New) A method according to Claim 31, wherein if node index depth is less than optimal detail level, the polygon corresponding to said image parcel being subdivided into four polygons and correspondingly represented by the creation of four child nodes within an associated quad-tree data structure, and creating four image parcel download requests

34. (New) A method according to Claim 31 further comprising determining the ordered priority of requests for an image parcel and corresponding source overlay data.

35. (New) A method as claimed in Claim 34, further comprising associating download priority with each request by execution of a function that operates on a 2D polygon argument and returns a real number representing the request priority.

36. (New) A method according to Claim 34, wherein the function argument is a list of real (x, y) coordinates of e vertices of the polygon corresponding to said image parcel in screen coordinates after being clipped to fit within the viewing frustum.